**WHAT IS CLAIMED IS:**

1. A method for removing a selected portion of a semiconductor device so as to enable visualization of its circuitry while said device is electrically intact, comprising the steps of:

oscillating said semiconductor device in an X and a Y direction, said X and Y directions defining a plane and wherein said semiconductor device is oscillated in preselected amplitudes along said X and Y directions so as to define an area that is less than the area defined by the periphery of said semiconductor device; and

rotating a first tool at less than 6000 rpm about a Z axis that is perpendicular to said plane and engaging said semiconductor device with a distal radial surface of said tool with a constant force that is aligned along said Z axis, wherein said axial surface is configured for removing first preselected layers of said semiconductor device.

2. The method of claim 1, wherein said semiconductor device is encapsulated and wherein one of said first preselected layers comprises a portion of said encapsulation.

3. The method of claim 1, wherein said semiconductor device includes a silicon die and wherein one of said first preselected layers comprises a portion of said silicon die.

4. The method of claim 1, wherein said axial surface of said first tool has a diamond abrasive disposed thereon.

5. The method of claim 1, wherein said axial surface of said first tool comprises wood.

6. The method of claim 1, wherein said axial surface of said first tool comprises leather.

7. The method of claim 1, wherein said axial surface of said first tool comprises polyurethane.

8. The method of claim 1, further including the steps of cross-sectioning said semiconductor device and measuring the thicknesses of its layers so as to enable appropriate selection of said axial surface of said first tool to be made.

9. The method of claim 8, wherein said constant force is applied along said Z axis to preselected depths in said layers.

10. The method of claim 1, further comprising the steps of:

rotating a second tool at less than 10,000 rpm about said axis and locking said tool into a preselected position along said Z direction in engagement with said semiconductor device

wherein said tool has a circumferential surface configured for removing second preselected layers of said semiconductor device; and

oscillating said semiconductor device in said X and Y directions at said preselected amplitudes.

11. The method of claim 10, wherein said semiconductor device includes a copper paddle and one of said second preselected layers include a portion of said copper paddle.

12. The method of claim 10, further including the steps of cross-sectioning said semiconductor device and measuring the thicknesses of its layers so as to enable proper selection of said first and second tools.

13. The method of claim 1, further including the step of tilting said semiconductor device such that said plane is parallel with a plane defined by the interfaces of its layers.

14. An apparatus for removing a selected portion of a semiconductor device so as to enable visualization of said device while its circuitry is electrically intact, comprising:

a table for supporting a semiconductor device, said table being oscillatable in an X and a Y direction to define a plane and at preselected amplitudes in said X and Y directions;

a floating head for rotating a chuck about a Z axis while applying a constant force along said Z axis, wherein said Z axis is perpendicular to said plane; and

a tool having an axial surface configured for removing portions of said semiconductor device.

15. The apparatus of claim 14, wherein said amount of constant force that is applied along the Z axis is adjustable.

16. The apparatus of claim 15, further comprising an adjustable stop to prevent said constant force from being applied beyond a preselected position along said Z axis.

17. The apparatus of claim 14, wherein said amplitudes in said X and Y directions are adjustable.

18. The apparatus of claim 14, wherein said table is tiltable about said X and Y directions.